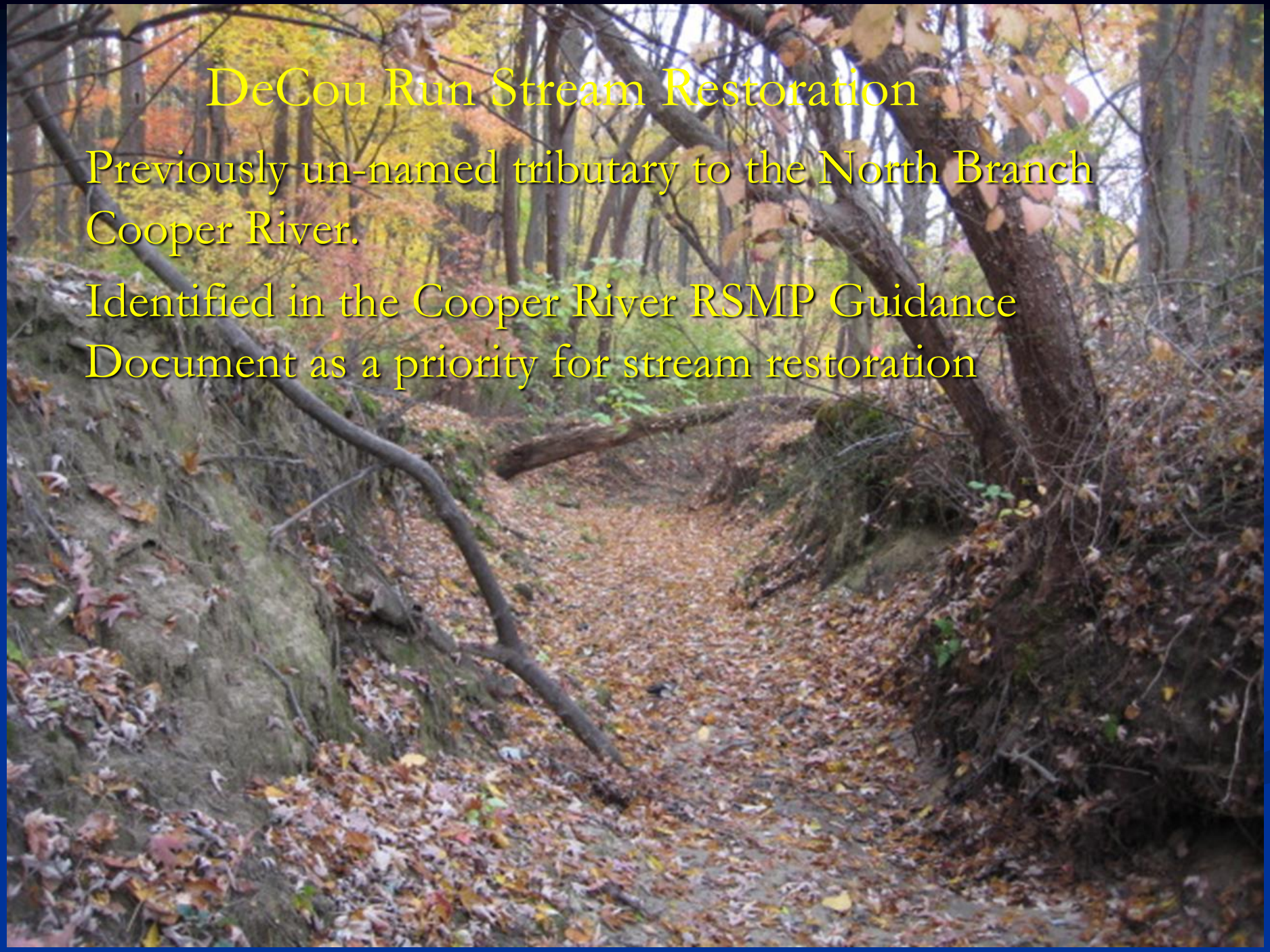
Lessons Learned from DeCou Run Stream Restoration Project

Camden County Soil Conservation District

2008 319(h) NPS

Camden SCD

- Eight time 319(h) grantee over the past 15 years
- Six successful projects, one just starting
  - Watershed plan development
  - Green Infrastructure Design and Implementation
  - Stormwater Basin Enhancement
  - Rain Gardens and Stormwater Education
- One Project– not as successful – and the topic of today's presentation



DeCou Run Stream Restoration

Previously un-named tributary to the North Branch Cooper River.

Identified in the Cooper River RSMP Guidance Document as a priority for stream restoration

Figure 1. Aerial photograph depicting a segment of DeCou Run extending from Springdale Rd. (downstream) to Cropwell Road (upstream). DeCou Run has been divided into four sections to facilitate a better understanding of geomorphic processes. Project work will take place within Sections 3 and 4 (Source: Microsoft Corporation).

NTS

The Problem

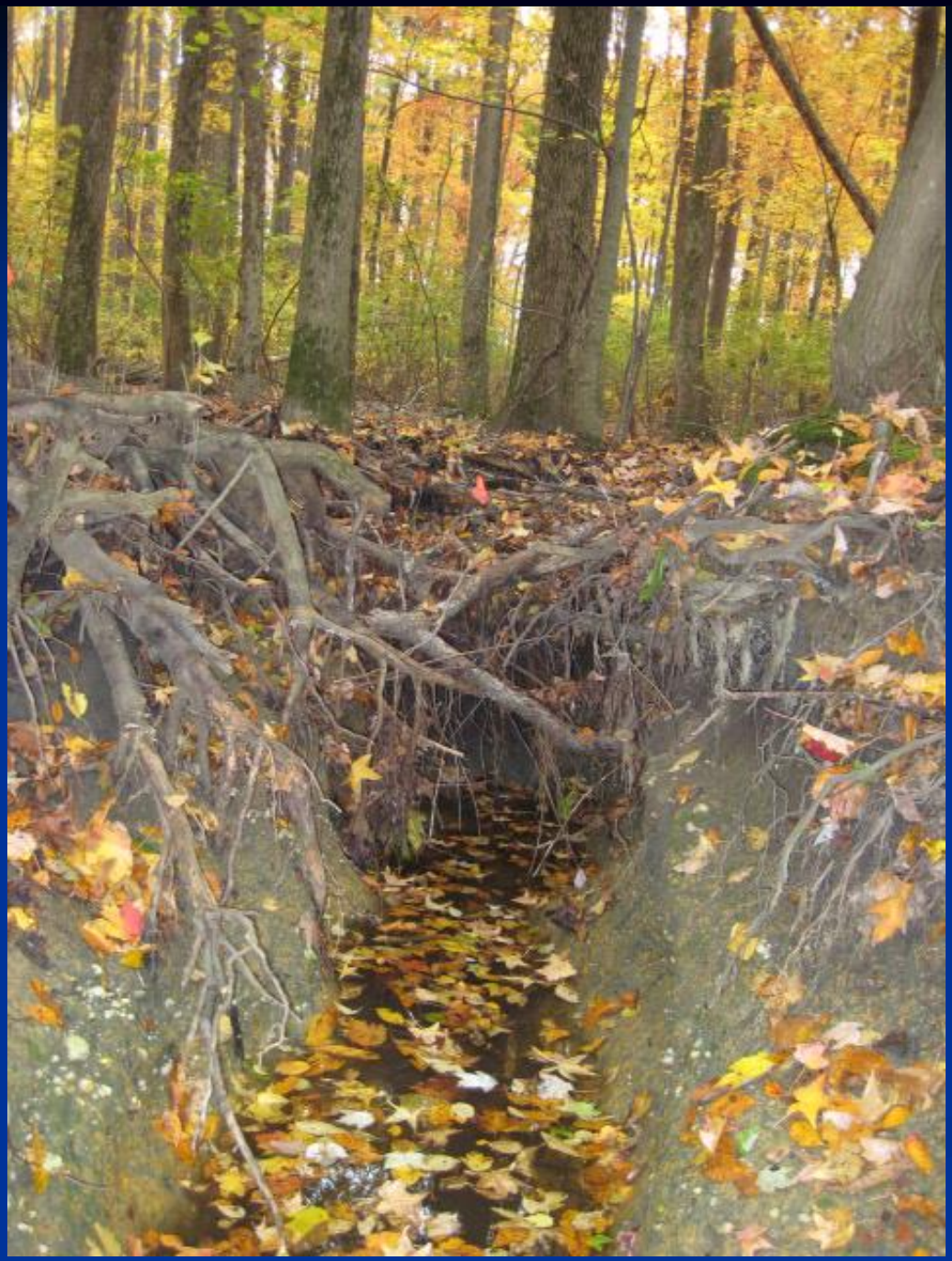
- Badly eroded intermittent headwater stream originating at stormwater outfall
- About 400 ft. of gully ranging from 15 to 5 feet deep
- Beyond gully, sediment has been deposited in floodplain creating a delta of sand and a braided stream channel
- Flows re-concentrate further downstream where channel erosion begins again, including a migrating head cut.

The Problem, continued

- Eroded channel is significant source of sediment
- Sediment deposits have accumulated more than one foot in places, smothering small trees and understory vegetation
- Severe streambank erosion downstream of project area
- Ongoing source of sediment to Cooper River

Shows the failing downstream end of the cable concrete channel lining

The gully at this point is about 15 feet deep and has probably cut about 4 feet since cable concrete was installed 12 years ago.



Near the end of Fries Lane the gully reforms and a head cut has developed. This area has retreated backward about 3 feet since we began considering this project.

DeCou Run Stream Restoration Project History

- CCSCD and Consultant prepared a proposal NJDEP DWM to design and build a natural stream restoration project at DeCou Run
- Township Department of Engineering and Environmental Board joined the project
- Project was funded with an EPA 319(h) NonPoint Source Pollution Control Grant administered by NJDEP
- Initial project work began in fall 2008

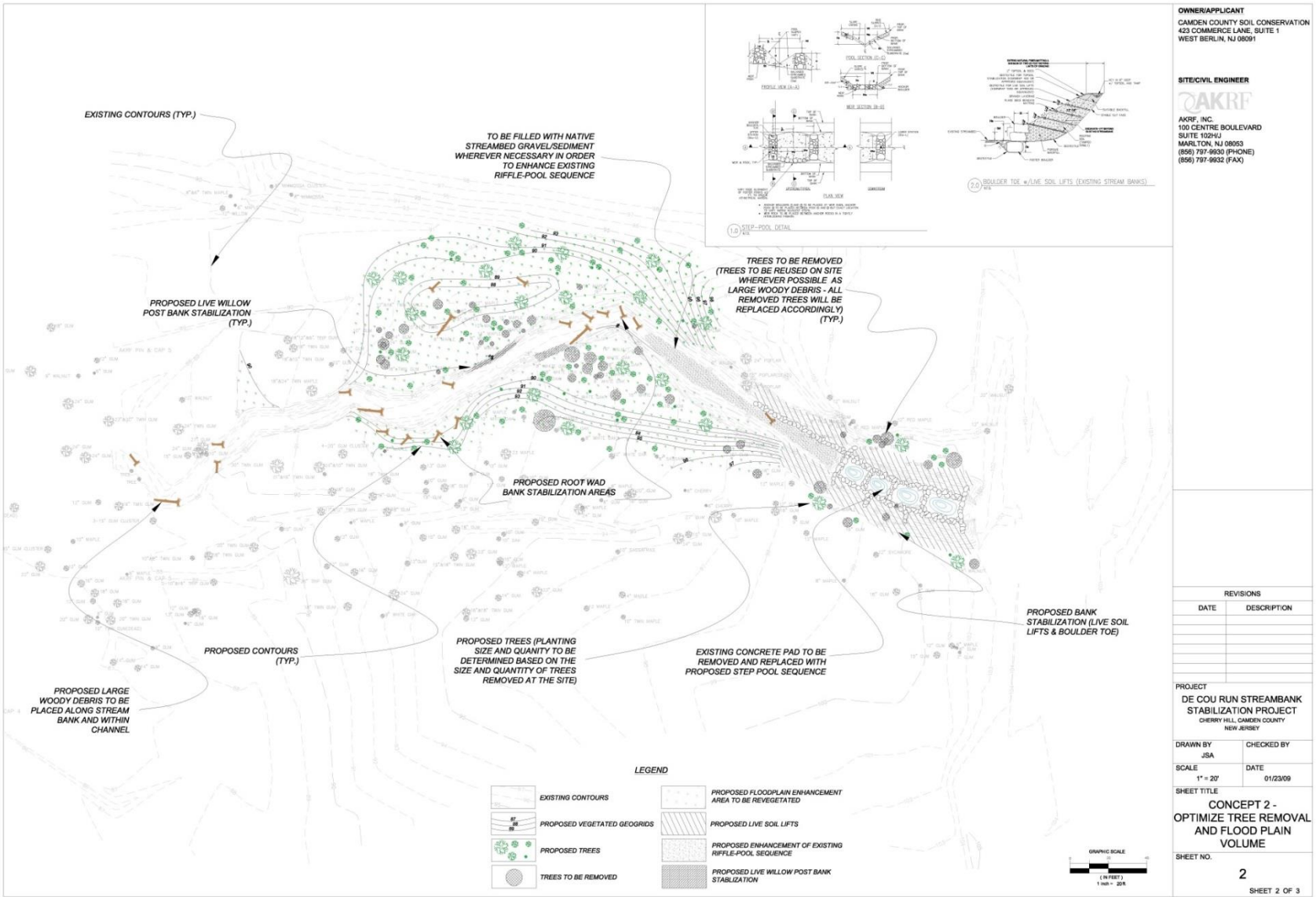
Restoration Plan

- Stabilize failure of existing cable concrete protection
- Stabilize stream banks
- Create and reconnect stream to flood plain
- Stabilize head cut

Project Timeline

- Detailed Survey & Data Collection– Fall 2008
- Initial Meeting w/ NJDEP LURP – Nov. 08
- Conceptual Designs – January 2009
- Township Approval
- Concept Plan presented to LURP ~ Feb. 09 – support appeared favorable
- NJDEP Permits submitted – Aug 2009
- Site Meeting with LURP and DWM Oct 2009

Concept Plan – Optimize for tree removal and flood storage



Project Timeline

- LURP advises application "does not meet the necessary pre-conditions of a FHACA hardship waiver and that the normal riparian zone allowable disturbance limits can not be waived"
- Application withdrawn Nov. 2009
- Wide-spread confusion

Project Timeline

- After an extensive period of negotiations between grantee, consultant and LURP the project was revised and permits were re-submitted in Aug 2011.
- FHA and FW Individual Permits issued Sept 2011
- Finalized Agreement with Township (Property Owner) for Township to prepare bid specifications and advertise per NJ Public Contract law –Spring 2012
- First of Several No-Cost Time Extensions Request from the now Division of Policy Implementation and Watershed Restoration

Project Timeline
Public Bidding

- Fall 2012- First advertisement – no bidders -– assumed the short lead time and limited construction window was part of the problem
- Winter 2012/13 NCTE approved and project advertised again – three bidders all exceeding available funds
- Spring 2013 Third public bidding – again all bidders exceeded available funds –
  - Still failed to reach specialized stream restoration contractors that could presumable perform work more cost effectively

Project Timeline
Public Bidding

- Summer 2103 – Project on hold while grant agreement modified – requesting additional funds and significant time extension
- Dec 2013 - Extension granted but no budget mod or extra funds- Project put on hold
- Sept 2014 –Add'l funds, budget mod and 1.5 year time extension approved
- Dec 2014- Project advertised again – again no bidders within budget but township agreed to negotiate with lowest bidder

Project Timeline
Contract and Construction

- Summer 2015 – Scope of work reduced, negotiated with lowest bidder, agreed to costs and awarded contract
- Dec 2015 – Project constructed
- Feb 2016 – Final 319 (h) Report to NJDEP

Lessons Learned

Permitting

- Be fully informed on any and all permit issues your project may require, including waivers needed
- Coordinate directly with individual reviewing your permit application instead of just agency staff
- Allow plenty of lead time in project schedule to accommodate hiccups
- Bureau of Environmental Analysis, Restoration and Standards is now more directly involved in 319 LUR permitting issues

Lessons Learned

Subcontracting

- For unique projects consider design/build consultants/contractors
- Anticipate cost increases into your budget when you write proposal – Prevailing wage goes up every year
- Be sure to understand the difference between private and public construction costs
- If you (the grantee) won't be directly handling the public bidding be prepared to work carefully with the agency that will be handling the bidding

Lessons Learned

Natural Stream Restoration

- DeCou Run probably could have been stabilized much cheaper using non-natural methods i.e. gabions are cheaper to install than boulders
- There was nothing natural about the stream channel we created in Cherry Hill – those boulders, riprap etc are not native to the area.
- Hydrologic modification of watershed results in un-natural flows that may require non-natural restoration techniques

Lessons Learned

Natural Stream Restoration

- Specialized contractors experienced in natural stream restoration practices can likely complete this work more efficiently than general contractors - if you can get them to your site
- Keep your solutions as simple as possible to solve the problem – this will likely also be the least expensive option too.

Lessons Learned

Proposal Writing

- Build extra time into project schedule – time extensions may be more difficult to obtain than in previous years
- Keep it simple
- Carefully develop a realistic budget to cover all appropriate costs and if possible build in options to deal with cost overruns.
- Good Luck